

REMARKS

Status of Claims:

Claims 8-12 are pending for examination.

Previously Filed Drawing Corrections:

The examiner is requested to acknowledge and approve the drawing corrections including the Replacement Sheets previously file with the amendment mailed October 25, 2004.

Prior Art Rejections:

Claims 8-13 stand rejected under 35 U.S.C. § 103 obvious over applicant's admitted prior art (AAPA) in view of Leung (5,645,434).

The examiner's rejections are respectfully traversed.

Applicant's admitted prior art, as shown in figure 9, has several disadvantages which are discussed in the specification on pages 1-4 and in particular on pages 3-4. Applicant's modular construction is intended to solve the problems of the prior art and to permit the user of the interface to carry the minimum amount of components necessary which results in the device having the least amount of weight and bulkiness and further in a device which requires the fewest amount of cables. As such, each of applicant's interface modular units shown in figure 7 is itself composed of a simple structure and includes expansion slots so that the individual modular units may be connected together without a cable therebetween. In other words, modular unit 1-1 may be directly connected to modular unit 12-1 without a cable therebetween as shown in figure 7. Moreover, the electrical/electronic device 2 may be connected to any one of the USB connectors 3-1, 3-2 and 3-3 and in so doing the USB hub in conjunction with the selectors 13-1 and 13-2 will permit the electrical/electronic product 2 to be connected to any one of the peripheral equipment devices including the USB peripheral equipment 24-1 and the more general (non-USB) peripheral equipment 22-1 and 22-2. See for example, applicant's specification as originally filed on page 16 beginning at line 3.

Apparently, in connection with claim 12, paragraph 2) e), the examiner is equating the recited “selector” of the first USB interface with the USB hub 105 of USB interface 100 (Fig. 9) of AAPA, and at the same time equating the recited hub of paragraph 3) d) with an assumed hub 105 within USB unit 108 (Fig. 9). However, the recitations of claim 12 show that such reasoning is inappropriate. Claim 12 recites:

12. (Previously Presented) A USB interface device in which an electrical/electronic product is connected to a general peripheral device and a USB peripheral device by transmitting and receiving a USB signal, comprising:

1) at least one first USB interface and at least one second USB interface each being modular units inter-connectable to each other without a cable therebetween,

2) said first USB interface comprising:

a) a first USB connector to transmit and receive the USB signal to/from the electrical/electronic product,

b) an first expansion connector for directly connecting to said second USB interface without a cable therebetween;

c) a first external interface connector for transmitting and receiving an external interface signals to/from the general peripheral device,

d) a single conversion circuit to convert the USB signal into said external interface signal that is transmitted to and received from the general peripheral device; and

e) a selector connected between said first USB connector and said conversion circuit for multiplexing said USB signal between said conversion circuit and said first expansion connector;

3) said second USB interface comprising:

a) a second USB connector to transmit and receive the USB signal to/from the electrical/electronic product,

b) an second expansion connector for directly connecting to the first expansion connector of said first USB interface without a cable therebetween;

c) a second external interface connector for transmitting and receiving said USB signal to/from the USB peripheral device, and

d) a hub to transmit and receive the USB signal to/from said second external interface connector and to/from said second expansion connector for feeding said USB signal to said USB peripheral device and the conversion circuit of said first USB interface respectively.

As may be seen from the underlined portions of claim 12 set forth above, the selector and hub have different functions. The selector, part of the first USB interface (interface 1-1 in Fig. 7), is used for multiplexing said USB signal between said conversion circuit and said first expansion connector. In contrast, the hub, part of the second USB interface (interface 11-1 in Fig. 7) is used for feeding said USB signal to said USB peripheral device and the conversion circuit of said first USB interface respectively. It is thus entirely inappropriate and incorrect for the examiner to use the single teaching of the hub in AAPA Fig. 9 for both teachings – even assuming that the USB unit 108 may be considered exactly the same as the USB interface 100, a point not conceded by applicant.

As such, it is submitted that the limitations of claim 12 are not made obvious over AAPA even when AAPA is combined with the teachings of Leung.

Further, the limitations of the direct connections without a cable when combined with the recited “single” conversion circuit, help to permit applicant’s invention to enjoy easy portability and expandability. Rather than the use of a large USB interface 100 shown in AAPA’s Fig. 9 (where 4 separate conversion circuits are shown) with cables 103 used to interconnect the USB interface to the external device 102 and external USB interface 108, applicant may interconnect, without a bulky cable, as many of the USB interfaces as may be needed so that a minimum amount of size and weight may be achieved. Thus, if only two conversion circuits are needed, then only two USB interfaces 1-1 and 1-2 would be interconnected together as shown in applicant’s Fig. 7. In this connection it is pointed out that applicant is not broadly claiming interconnections without the use of cables. Indeed such interconnections *per se* have long been known in the art. Applicant’s claims are much more limited. Applicant’s direct (cableless) interconnections when combined with the single

conversion circuit structure of each USB interface permits the objective of transportability with minimum weight and size to be achieved.

Further, the examiner cites ex parte Wu and In re Larson for the proposition that “omission of an element and its function is obvious if the function is not desired.” If the AAPA desired not to use any of the conversion circuits of Fig. 9, then simply put, these conversion circuits would just not be used. One would not be motivated, under the teachings of AAPA to construct separate modular units with each unit containing only a single conversion circuit as recited.

Claim 13 recites a third USB interface. This third USB interface includes another single conversion circuit. As such, this third USB interface corresponds to interface 1-2 Fig. 7. Thus, claim 13 recites all three interfaces 12-1; 1-1 and 1-2. The interface 12-1 recites the hub whereas the interfaces 1-1 and 1-2 do not recite the hub but rather recite the selectors. Clearly this structure is not made obvious by the combined teachings of the prior art.

Applicant has amended independent claim 8 to make it clear that there is a first and second USB interface. Since each of these USB interfaces contain a single conversion circuit, these USB interfaces correspond to interfaces 1-1 and 1-2 in Fig. 7. Again the USB interfaces are directly connected together without cables and each contains only a single conversion circuit.

In view of the amendments made hereto and the comments set forth above, it is submitted that the PTO has not made out a *prima facie* case of obviousness with the provisions of 35 U.S.C. § 103.

Conclusions:

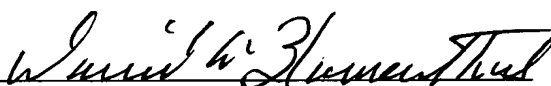
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By 

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